

Amendments to the Claims

This listing of claims will replace all previous versions, and listings of claims in the application:

Claims 1-6. **CANCELED**

7. (Currently amended) A transistor, comprising:

an emitter and a collector, or a base made of a transparent n-type semiconductor ~~such as comprising any one of~~ zinc oxide ZnO, zinc magnesium oxide $Mg_xZn_{1-x}O$, zinc cadmium oxide $Cd_xZn_{1-x}O$ and cadmium oxide CdO doped with group III elements or group VII elements;

a base, or an emitter and a collector made of a transparent p-type semiconductor ~~such as comprising any one of~~ zinc oxide ZnO, zinc magnesium oxide $Mg_xZn_{1-x}O$, zinc cadmium oxide $Cd_xZn_{1-x}O$ and cadmium oxide CdO doped with group I elements or group V elements; and

a base electrode, an emitter electrode and a collector electrode, in which

(1) a transparent conductive material such as conductive ZnO doped or undoped with any one of group III elements, group VII elements and group I elements,

(2) a transparent conductor such as In_2O_3 , SnO_2 and $(In-Sn)O_x$, or

(3) an untransparent electrode material

are used partially or entirely, the base electrode, the emitter electrode and the collector electrode being respectively formed on said base, said emitter and said collector.

8. (Original) A semiconductor device, comprising:

the transistor according to claim 7; and

a light emission portion formed of a region continuous to said collector or said emitter of said transistor or a region of another semiconductor connected to said collector or said emitter, and a semiconductor layer joined to said region.

9. (Original) A semiconductor device, comprising:

the transistor according to claim 7, and a capacitor formed of a region continuous to said collector and said emitter of said transistor or a region of another semiconductor or a conductor connected to said collector or said emitter, an insulating layer on said region, and a semiconductor layer or a conductive layer on said insulating layer.

Claims 10-12. **CANCELED**

13. (Currently amended) A semiconductor device, comprising a plurality of ~~wherein the transistor~~ transistors according to claim 7, ~~is stacked in plural with~~ and an insulating layer ~~therebetween, said insulating layer is between transistors of said plurality of transistors;~~

~~wherein said~~ [[the]] insulating layer ~~using~~ comprises a transparent insulating material ~~such as including at least one of~~ insulative ZnO doped with elements capable of taking a valence of one as a valence number or group V elements, a transparent insulating oxide, ~~[[or]]~~ and a transparent insulator.

14. (Currently amended) A semiconductor device, comprising:

a plurality of transistors according to claim 7; and

wiring between said plurality of transistors,

~~wherein said wiring comprises~~ a transparent conductive material ~~such as including at least one of~~ conductive ZnO doped or undoped with group III elements, group VII elements, group I elements and group V elements, a transparent conductor comprising at least one of In_2O_3 , SnO_2 , and $(\text{In}\cdot\text{Sn})\text{O}_x$, or a ~~untransparent un-transparent~~ electrode material ~~is used for all of wiring or a part of the wiring between said transistors.~~

15. (Currently amended) A semiconductor device, comprising:

the transistor according to claim 7; and

an inductor ~~comprising made of~~ a transparent conductive material ~~such as~~ , said transparent conductive material comprising at least one of conductive ZnO doped or undoped with group III elements, group VII elements, group I elements and group V elements, ~~[[or]]~~ and a transparent conductor ~~such as comprising at least one of~~ In_2O_3 , SnO_2 and $(\text{In}\cdot\text{Sn})\text{O}_x$.

16. (Currently amended) A semiconductor device, wherein a plurality of the semiconductor devices according to claim 8~~[[,]]~~ are arranged in a matrix shape, and a capacitor or a light emission portion is driven by each transistor.

17. (Currently amended) A semiconductor device, wherein a plurality of the semiconductor devices according to claim 9~~[[,]]~~ are arranged in a matrix shape, and a capacitor or a light emission portion is driven by each transistor.

18. (Currently amended) A method of making a transistor, comprising:

depositing an emitter and a collector, or a base, wherein said emitter and said collector, or

said base are made of a transparent n-type semiconductor comprising any one of such as ZnO, zinc magnesium oxide $MgxZn_{1-x}O$, zinc cadmium oxide $CdxZn_{1-x}O$, and cadmium oxide CdO, and said n-type semiconductor is doped with group III elements or group VII elements;

depositing a base, or an emitter and a collector, wherein said base, or said emitter and said collector are made of a transparent p-type semiconductor comprising at least one of such as ZnO, zinc magnesium oxide $MgxZn_{1-x}O$, zinc cadmium oxide $CdxZn_{1-x}O$, and cadmium oxide CdO, said p-type semiconductor doped with group I elements or group V elements; and

depositing a base electrode, an emitter electrode and a collector electrode, in which wherein said base electrode, said emitter electrode and said collector electrode comprise a transparent conductive material such as comprising conductive ZnO doped or undoped with any one of group III elements, group VII elements and group I elements, or a transparent conductor such as conductive material comprising at least one of In_2O_3 , SnO_2 and $(In-Sn)O_x$, or an untransparent un-transparent electrode material are used partially or entirely, the
and

wherein said base electrode, [[the]] said emitter electrode and [[the]] said collector electrode being are respectively formed on said base, said emitter, and said collector.

19. (NEW) The transistor of claim 7, wherein said transparent n-type semiconductor includes at least conductive ZnO doped with group III elements or group VII elements.

20. (NEW) The transistor of claim 7, wherein said transparent p-type semiconductor includes at least conductive ZnO doped with group I elements or group V elements.

21. (NEW) The transistor of claim 7, wherein said transparent conductive material includes at least one conductive ZnO undoped and conductive ZnO doped with at least one of group III elements, group VII elements, and group I elements.

22. (NEW) The transistor of claim 7, wherein said transparent conductive material includes at least one of In_2O_3 , SnO_2 , and $(In-Sn)O_x$.

23. (NEW) The transistor of claim 7, wherein said base is made of a transparent n-type semiconductor.

24. (NEW) The transistor of claim 7, wherein said base is made of a transparent p-type semiconductor.

25. (NEW) The method of claim 18, wherein said transparent n-type semiconductor includes at least conductive ZnO doped with group III elements or group VII elements.

26. (NEW) The method of claim 18, wherein said transparent p-type semiconductor includes at least conductive ZnO doped with group I elements or group V elements.

27. (NEW) The method of claim 18, wherein said transparent conductive material includes at least one of conductive ZnO undoped and conductive ZnO doped with any one of group III elements, group VII elements and group I elements.

28. (NEW) The method of claim 18, wherein said transparent conductive material includes at least one of In_2O_3 , SnO_2 , and $(\text{In-Sn})\text{O}_x$.

29. (NEW) The method of claim 18, wherein said base is made of a transparent n-type semiconductor.

30. (NEW) The method of claim 18, wherein said base is made of a transparent p-type semiconductor.

31. (NEW) A method of making a transistor, comprising:

providing an emitter and a collector, or a base, wherein said emitter and said collector, or said base are made of a transparent n-type semiconductor comprising at least one of zinc oxide ZnO, zinc magnesium oxide $\text{Mg}_x\text{Zn}_{1-x}\text{O}$, zinc cadmium oxide $\text{Cd}_x\text{Zn}_{1-x}\text{O}$, and cadmium oxide CdO, and said n-type semiconductor is doped with at least one of group III elements and group VII elements;

providing a base, or an emitter and a collector, wherein said base, or said emitter and said collector are made of a transparent p-type semiconductor comprising at least one of zinc oxide ZnO, zinc magnesium oxide $\text{Mg}_x\text{Zn}_{1-x}\text{O}$, zinc cadmium oxide $\text{Cd}_x\text{Zn}_{1-x}\text{O}$, and cadmium oxide CdO, and said p-type semiconductor is doped at least one of with group I elements and group V elements; and

providing a base electrode, an emitter electrode, and a collector electrode;

wherein said base electrode, said emitter electrode, and said collector electrode respectively are formed on said base, said emitter, and said collector;

wherein said base electrode, said emitter electrode, and said collector electrode comprise:

(1) a transparent conductive material comprising conductive ZnO that is undoped and

conductive ZnO that is doped with at least one of group III elements, group VII elements, and group I elements; or

(2) a transparent conductor comprising at least one of In_2O_3 , SnO_2 , and $(\text{In-Sn})\text{O}_x$; or

(3) an un-transparent electrode material.

32. (NEW) A method of using a transistor, said transistor comprising:

an emitter and a collector, or a base, wherein said emitter and said collector, or said base are made of a transparent n-type semiconductor comprising any one of zinc oxide ZnO, zinc magnesium oxide $\text{Mg}_x\text{Zn}_{1-x}\text{O}$, zinc cadmium oxide $\text{Cd}_x\text{Zn}_{1-x}\text{O}$, and cadmium oxide CdO, and said n-type semiconductor is doped with at least one of group III elements and group VII elements; or

a base, or an emitter and a collector, wherein said base, or said emitter and said collector are made of a transparent p-type semiconductor comprising any one of zinc oxide ZnO, zinc magnesium oxide $\text{Mg}_x\text{Zn}_{1-x}\text{O}$, zinc cadmium oxide $\text{Cd}_x\text{Zn}_{1-x}\text{O}$, and cadmium oxide CdO, and said p-type semiconductor is doped with at least one of group I elements and group V elements;

a base electrode, an emitter electrode, and a collector electrode;

wherein said base electrode, said emitter electrode, and the collector electrode are respectively formed on said base, said emitter, and said collector;

wherein said base electrode, said emitter electrode, and said collector electrode comprise:

(1) a transparent conductive material comprising one of conductive ZnO that is undoped and conductive ZnO that is doped with at least one of group III elements, group VII elements, and group I elements; or

(2) a transparent conductor comprising at least one of In_2O_3 , SnO_2 , and $(\text{In-Sn})\text{O}_x$, or

(3) an un-transparent electrode material; and

said method comprising applying a voltage across at least one electrode of said transistor.

33. (NEW) A transistor, comprising:

an emitter and a collector, or a base made of a transparent n-type semiconductor, said transparent n-type semiconductor comprising at least one of zinc oxide ZnO, zinc magnesium oxide $\text{Mg}_x\text{Zn}_{1-x}\text{O}$, zinc cadmium oxide $\text{Cd}_x\text{Zn}_{1-x}\text{O}$, and cadmium oxide CdO, and said transparent n-type semiconductor is doped with at least one of group III elements and group VII

elements;

a base, or an emitter and a collector made of a transparent p-type semiconductor, said transparent p-type semiconductor comprising any one of zinc oxide ZnO, zinc magnesium oxide $\text{Mg}_x\text{Zn}_{1-x}\text{O}$, zinc cadmium oxide $\text{Cd}_x\text{Zn}_{1-x}\text{O}$, and cadmium oxide CdO, and said transparent p-type semiconductor is doped with at least one of group I elements and group V elements; and

a base electrode, an emitter electrode, and a collector electrode;

wherein said base electrode, said emitter electrode, and said collector electrode are respectively formed on said base, said emitter, and said collector; and

wherein said base electrode, said emitter electrode, and said collector electrode comprise:

(1) a transparent conductive material comprising one of conductive ZnO that is un-doped and conductive ZnO that is doped with at least one of group III elements, group VII elements, and group I elements; or

(2) a transparent conductor comprising at least one of In_2O_3 , SnO_2 , and $(\text{In-Sn})\text{O}_x$; or

(3) an un-transparent electrode material.